

PRODUCE SAMPLING

Purpose This Meteorology and Air Quality Group (MAQ) procedure describes the methods of collection for produce (fruits, vegetables, and grains) samples.

Scope This procedure applies to the individual(s) assigned to collect produce as part of the Foodstuffs Monitoring Program.

In this Procedure	Topic	See Page
	General Information About This Procedure	2
	Who Requires Training to This Procedure?	3
	Worker Safety	4
	Sample Collection	5
	Chain-of-Custody for Samples	7
	Records Resulting From This Procedure	8

Hazard Control Plan The hazard evaluation associated with this work is documented in Attachment 1: Initial risk = **low**. Residual risk = **low**. Work permits required: none. First authorization review date is one year from group leader signature below; subsequent authorizations are on file in group office.

Signatures	Prepared by: _____ Phil Fresquez, Environmental Surveillance Team Leader	Date: <u>5/12/04</u>
	Approved by: _____ Terry Morgan, QA Officer	Date: <u>5/12/04</u>
	Work authorized by: _____ Jean Dewart, MAQ Group Leader	Date: <u>5/14/04</u>

05/24/04

CONTROLLED DOCUMENT

This copy is uncontrolled if no red stamp is present on printed copies. Users are responsible for ensuring they work to the latest approved revision.

General information about this procedure

Attachments This procedure has the following attachments:

Number	Attachment Title	No. of pages
1	Hazard Control Plan	2
2	Chain-of-Custody Record	1
3	Sampling Locations	3

History of revision This table lists the revision history and effective dates of this procedure.

Revision	Date	Description Of Changes
0	10/4/96	New document.
1	3/99	Reformatted in accordance with LIR300-00-01, Safe Work Practices.
2	4/01	Added new Section 9.0, Training.
3	4/02	Change in directorate.
4	4/03	Team name change to Environmental Surveillance.
5	5/12/04	Updated and reformatted document to conform with MAQ procedures.

Who requires training to this procedure? The following personnel require training before implementing this procedure:

- MAQ personnel assigned to collect produce samples

Training method The training method for this procedure is **on-the-job** training by a previously-trained individual and is documented in accordance with the procedure for training (MAQ-024).

Annual retraining is required and will be by self-study (“reading”) training.

Prerequisites In addition to training to this procedure, the following training is also required prior to performing this procedure:

- First Aid
- Cardiopulmonary Resuscitation (CPR)
- MAQ-Field, “General Field Safety for All Employees”

General information, continued

Definitions specific to this procedure

Foodstuffs: produce (fruits, vegetables, and grains), fish (surface feeders and bottom feeders), eggs, milk, brewed tea, honey, and game animals.

Produce: any fruit, vegetable, and/or grain that could be consumed directly from a garden or an orchard after simple washing.

References

The following documents are referenced in this procedure:

- MAQ-024, “Personnel Training”
 - MAQ-026, “Deficiency Reporting and Correcting”
 - MAQ-Field, “General Field Safety All Employees”
-

Note

Actions specified within this procedure, unless preceded with “should” or “may,” are to be considered mandatory guidance (i.e., “shall”).

Worker Safety

Precautions and limitations

This document establishes the basic requirements for collecting produce samples. Work performed under this procedure by LANL personnel will occur only after required training to applicable documents has been completed and documented.

Safe work practices requirements

Project Personnel - A minimum of two people is required to go out in the field.

Personal Protective Equipment - For produce sampling, the following personal protective equipment must be worn: safety glasses, safety/field shoes, Kevlar safety gloves, and a hat.

Do not perform work under conditions you consider unsafe. Before beginning work described in this procedure, review safety needs and requirements, identify hazards, and develop hazard mitigation measures.

Sample Collection

- Sample types** Three types of produce are collected:
- fruits: apricots, apples, crabapples, peaches, pears, plums, melons, cherries, etc.
 - vegetables: chile, sweet corn, cucumbers, lettuce, pumpkins, squash, tomatoes, etc.
 - grain: corn, wheat, oats, etc.

- Sample locations** Samples of produce are collected from three areas:
- On-site: Includes sites on Laboratory property.
 - Perimeter: Includes Los Alamos townsite, White Rock/ Pajarito Acres, San Ildefonso, and Cochiti.
 - Regional background: Includes the Española Valley (from Pojoaque to Velarde), Santa Fe, and Jemez.

Number of samples The following table indicates the number of composite samples that should be collected from each area.

Note: This table is a guide for the ideal distribution of samples. Because of many factors that are beyond the control of gardeners and farmers, especially weather, it may not be possible to adhere to this distribution every year.

	On-site Lab	Los Alamos	White Rock/ Pajarito Acres	Española Valley
Vegetables	—	2	2	1
Fruits	5	2	2	1
Grains	—	2	2	1
	Santa Fe	Jemez	San Ildefonso	Cochiti
Vegetables	1	1	2	2
Fruits	1	1	2	2

Continued on next page.

Sample Collection, continued

Equipment needed

Additional specific equipment required for going into the field is given in the procedure MAQ-Field, “General Field Safety for All Employees”.

The following equipment is required for produce sampling:

- rubber gloves
- sharp knife
- Kevlar safety gloves
- garden clippers
- zip-lock bags (gallon size)
- marker for labeling bags
- ice chest with ice
- chain-of-custody forms (Attachment 2)

Before leaving for the field

Identify a point-of-contact (providing pertinent information of destination, expected time-in, and how to notify field team). Notify group office to place you on travel status if leaving Los Alamos County. Check condition of vehicle and the fuel level. Ensure that you have a working cell phone and a pager.

Steps for sampling produce

When produce to be sampled is ripe (between July and September), plan trips to each sampling location and perform the following steps:

Step	Action
1	Travel to the sampling location and obtain permission from the garden owner to collect produce. It is best if you can collect the samples directly from the garden.
2	Collect approximately three pounds of produce and place into a zip-lock bag. Collect produce as if you were harvesting for human consumption. Label the bag with the sample location, date, time, and your initials.
3	Place the bags in the cooler with ice for transport back to the laboratory.
4	Complete a chain-of-custody form (Attachment 2) with the appropriate sampling information. Maintain applicable chain-of-custody procedures for samples until submitted to an analytical laboratory for analysis. See chapter <i>Chain-of-custody for samples</i> .
5	Once at the lab, store the samples on ice or in a freezer until they are processed (normally within two working days). Follow preparation and processing methods described in MAQ-706 (<i>Processing and Submitting Samples</i>).

Chain-of-custody for samples

Maintaining custody of samples

A sample is physical evidence collected from a facility or the environment. Chain-of-custody must be documented for all samples used to demonstrate compliance. Verify that the possession and handling of samples is traceable at all times. A sample is considered in custody if it is one of the following:

- In one's physical possession.
- In one's view after being in one's physical possession.
- In one's physical possession and then locked up so that no one can tamper with it.
- Kept in a secure area where access is restricted to authorized and accountable personnel only.

NOTE: A secured area is an area that is locked, such as a room, cooler, vehicle, or refrigerator. If the area cannot be secured by locking, use a custody seal to secure the area or the sample container.

Transferring custody of samples

Whenever samples are transferred into the custody of another person or organization, complete the "relinquished by/received by," "date," and "time" sections of the form (Attachment 2). These sections of the form must provide a complete history of custody of the samples from collection to transfer to the analytical laboratory.

If chain-of-custody is broken

Whenever there is a break in the chain of custody of a sample, document the failure by initiating a deficiency report in accordance with the procedure for deficiencies (MAQ-026). [The deficiency process will document the occurrence, evaluate the potential impact (if any) on the samples, and propose a fix to prevent recurrence.]

Records resulting from this procedure

Records

The following records generated as a result of this procedure are to be submitted **within one year** as records to the records coordinator:

- Chain-of-custody record

HAZARD CONTROL PLAN

1. The work to be performed is described in this procedure.

“Produce Sampling”

2. Describe potential hazards associated with the work (use continuation page if needed).

Falls/tripping – uneven terrain, carrying awkward objects or equipment

Animal Injuries- (snakes, spiders, mountain lions, etc.)

Weather —Lightning

Handling heavy objects (loading/unloading/transporting/postioning)

Use of knives and garden clippers

3. For each hazard, list the likelihood and severity, and the resulting initial risk level (before any work controls are applied, as determined according to LIR300-00-01, section 7.2)

Falls/tripping—occasional/moderate = low

Animal injuries- (snakes, spiders, mountain lions, etc.)—remote/critical = minimal

Weather—Lightning—remote/catastrophic = low

Handling heavy objects (loading/unloading/transporting/postioning)—improbable/moderate = minimal

Use of knives and garden clippers—improbable/moderate = minimal

Overall *initial* risk: ☐ Minimal ☒ Low ☐ Medium ☐ High

4. Applicable Laboratory, facility, or activity operational requirements directly related to the work:

☒ None ☐ List:

Work Permits required? ☒ No ☐ List:

HAZARD CONTROL PLAN, continued

5. Describe how the hazards listed above will be mitigated (e.g., safety equipment, administrative controls, etc.):

Falls/tripping – Read the "Field Safety for All" document on awareness of trips, slips, and falls.

Animal Injuries – Read the "Field Safety for All" document and use common sense to avoid these types of injuries.

Weather (lightning) -- Read the "Field Safety for All" document and seek shelter when necessary.

Handling heavy objects (loading/unloading/transporting/postioning)--Use proper lifting techniques.

Use of knives and garden clippers—Use care when cutting and wear protective (Kevlar) gloves.

6. Knowledge, skills, abilities, and training necessary to safely perform this work (check one or both):



Group-level orientation (per MAQ-032) and training to this procedure.



Other → See training prerequisites on procedure page 3. Any additional describe here:

7. Any wastes and/or residual materials? (check one) ☒ None ☐ List:

8. Considering the administrative and engineering controls to be used, the *residual* risk level (as determined according to LIR300-00-01, section 7.3.3) is (check one):



Minimal



Low



Medium (requires approval by Division Director)

9. Emergency actions to take in event of control failures or abnormal operation (check one):



None



List:

For all injuries, provide first aid and see that injured person is taken to Occupation Medicine (only if immediate medical attention is not required) or the hospital.

Signature of preparer of this HCP: This HCP was prepared by a knowledgeable individual and reviewed in accordance with requirements in LIR 300-00-01 and LIR 300-00-02.

Preparer(s) signature(s)

Name(s) (print)

/Position

Date

Signature by group leader on procedure title page signifies authorization to perform work for personnel properly trained to this procedure. This authorization will be renewed annually and documented in ESH-17 records. Controlled copies are considered authorized. Work will be performed to controlled copies only. This plan and procedure will be revised according to MAQ-022 and distributed according to MAQ-030.

Environmental Surveillance Team Chain-of-Custody Record

This form is from MAQ-701

Project Contact _____ Contact Phone No. _____ MS _____	Project Name Produce Sampling _____ _____	Account Code _____ Cost Center _____ Program Code _____
--	--	--

Date Collected	Time Collected	Station Name/Number	Number of Samples	Analysis Requested	Remarks

Relinquished by (print and sign)	Date	Relinquished by (print and sign)	Date	Relinquished by (print and sign)	Date
	Time		Time		Time
Received by (print and sign)	Date	Received by (print and sign)	Date	Received by (print and sign)	Date
	Time		Time		Time

Samplers (print names and initial) _____

Comments

